

Notice of Allowability

Application No.

10/635,720

Examiner

Judson H. Jones

Applicant(s)

KAWANO ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to ____.
2. ☒ The allowed claim(s) is/are 28-52.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/119663
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 1004, 0825
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____.
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

DETAILED ACTION

Allowable Subject Matter

Claims 28-52 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art of record does not disclose or teach a linear motor having a ring shaped permanent magnet supported by a tubular vibrator made of magnetic material in combination with the other features of claims 1 and 50-52.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kwon et al. 5,751,075 (cited by Applicant) does not disclose a ring shaped permanent magnet nor does it disclose a tubular vibrator made of magnetic material that supports the permanent magnet. See Kwon et al. column 2 lines 42-46 and see figures 2A and 3. Parker 3,917,914 teaches in column 2 lines 15-16 making a ring-shaped permanent magnet made of cobalt-rare earth material for use in a loudspeaker (i.e., a linear motor with a tubular vibrator) where the permanent magnet is attached to a fabric spider. Parker does not disclose details of the magnet but does cite several references including Benz 3,695,945 that deal with the subject of manufacturing such magnets. Benz teaches in column 5 lines 12-20 crushing a rare earth magnet, mixing the particles with a matrix material such as plastic and then compressing the mixture to form a magnet. According to Denne 6,608,408 B1 column 7 line 67 to column 8 line 1 "the magnetic materials with the best performance are inherently brittle." Making a ring shaped cobalt-rare earth magnet without crushing a magnet and mixing the particles with a matrix material is impossible or at least impractical due to stresses in the brittle material. Denne goes on to say, "such a dispersion technique reduces the performance of the material whilst further

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increasing the cost.” Parker also teaches in column 1 lines 20-27 that other types of magnets are unsuitable for moving magnet voice coil motors. For those reasons, there is no motivation for a person of ordinary skill in the art to have used a ring-shaped magnet with the device of Kwon et al. Using a ring-shaped magnet made with a matrix material would have increased the cost of the device while reducing the performance. As for the vibrator made of a magnetic material, Ishikawa et al. 5,160,447 teaches making a magnetic core from compressed powder in order to provide a flux path while reducing eddy currents. Ishikawa et al. does not teach making a magnetic core for a vibrator placed between a tubular outer yoke and tubular inner yoke as recited by applicant where weight and strength are important considerations. Combining the teachings of Kwon et al., Parker and Ishikawa et al. would have produced a device similar to that of applicant’s claim 1. However no motivation has been found for such a combination.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Judson H. Jones whose telephone number is 571-272-2025. The examiner can normally be reached on 8-4:30 M-F.

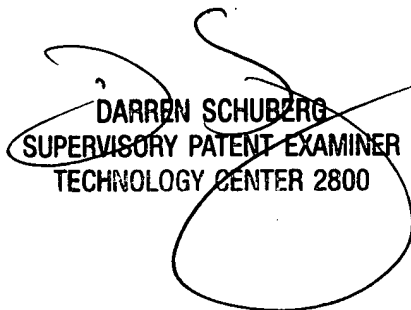
If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Judson Jones 9/2/2005



DARREN SCHUBERG
SUPERVISORY PATENT EXAMINER
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